COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

BAY STATE GAS COMPANY	)	D.T.E. 02-75

INITIAL BRIEF OF PETITIONER BAY STATE GAS COMPANY

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July 11, 2003

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I. INTRODUCTION AND PROCEDURAL HISTORY

On November 15, 2002, pursuant to M.G.L. c. 164, §§ 69 (I) et seq., Bay State Gas Company ("Bay State" or the "Company") filed with the Department of Telecommunications and Energy ("DTE" or the "Department") a petition for approval of its Long-Range Forecast and Supply Plan for the five-year period ending October 31, 2007. Pursuant to notice duly issued, the Department granted the petition to intervene of the Commonwealth of Massachusetts Division of Energy Resources ("DOER") and the Petition for Limited Participant Status of Boston Gas Company d/b/a Keyspan Energy Delivery New England. Pursuant to G.L. 12, § 11E, the Attorney General filed a notice of intervention. On January 15, 2003, the Department held at public hearing at its offices in Boston. The Department conducted an evidentiary hearing at its offices on May 20, 2003. In support of its Long-Range Forecast and Supply Plan, Bay State presented the following witnesses: Francisco C. DaFonte, Director of Energy Supply Services; William Gresham, Manager of Forecasting; Joseph Ferro, Manager of Regulatory Policy; and Stanley M. Dziura, Consultant to Bay State.

The evidentiary record consists of the Company's initial filing, responses to information requests, and responses to record requests. Pursuant to the established procedural schedule, Bay State hereby submits its Initial Brief.

II. BAY STATE'S FORECAST AND SUPPLY PLAN IS REVIEWABLE, APPROPRIATE AND RELIABLE

As discussed in the sections that follow, Bay State's filing meets the Department's standards for long-range forecast and supply plans pursuant to G.L. c. 164, § 69I. Bay State has provided a complete description of its planning process and results, enabling the Department to come to a full understanding of the methods used in the plan and the results reached through those methods. Thus, the plan is reviewable. The plan also demonstrates that Bay State's

planning standards are suitable to the Company's size and nature, and the resource strategies described herein are in the best interests of its customers. The Company's current forecast and supply planning process is prudent and results in a best-cost long-range supply and capacity portfolio to meet the forecast demand. The plan adequately meets the Company's expected future design day, seasonal and annual loads, as well as loads that could be expected during a cold snap. Thus, the plan is appropriate. Further, Bay State's assumptions, judgments, and data have forecast what is most likely to occur and the important resource decisions described in the plan are based upon appropriate simulation of customer and market circumstances over the forecast period. Thus, the plan is reliable.

III. DEVELOPMENT OF PLANNING STANDARDS

Bay State's planning process begins with an assessment of its customers' requirements. Bay State utilizes a combination of time series and econometric modeling techniques to generate its base case forecast of sales and transportation load. Forecasts are generated separately for the residential and commercial and industrial ("C&I") groupings based on models that separately estimate the number of customers and use per customer. The development of forecast models relies on a number of important data series including historical customer count, usage and economic data. Bay State also prepares high and low forecasts to establish a range of reasonable potential requirements. Each forecast is adjusted to reflect the impact of projected DSM savings. Exh. BSG-1, at 14.

A key design criterion for Bay State's forecast is weather. The Company performs a statistical analysis of historical weather data to derive planning standards for normal, design winter, cold snap and peak day conditions. Bay State also conducts a resource evaluation, utilizing a number of techniques. Id. at 14. Determination of need is accomplished by

simulating Bay State's portfolio utilizing the SENDOUT ® ("SENDOUT") optimization model. Bay State identifies potential resources to meet its requirements, including renewal or restructuring of existing resources, and potential pipeline, storage, citygate and on-system resources. Id. at 14. Resource evaluation includes assessment of both cost and non-cost characteristics of the potential resource. SENDOUT evaluates the cost impact of changes to Bay State's portfolio by simulating the daily dispatch of available resources under specified conditions. Id. at 15. Cost analysis is performed based upon each forecast, as well as under design and cold snap conditions. Id. Bay State also conducts a separate evaluation of non-cost criteria, including flexibility, diversity and reliability. Id. at 15. Bay State's planning process also utilizes a DSM resource-screening model to evaluate potential cost-effective DSM options. Id.

Once Bay State has conducted its various SENDOUT analyses, the results are translated into an action plan that encompasses short and longer-term resource strategies for Bay State's portfolio, including contracting or decontracting of individual resources. Id. at 15. Bay State also conducts an analysis using the SENDOUT model based upon updated information prior to taking specific actions to adjust its portfolio. Id.

A. Input Data

Bay State's forecasting models are estimated based on a number of internal and external data sources, including historical company data from the first quarter of 1983 through the second quarter of 2002. Exh. BSG-1, at 19. This data includes number of active meters and MMBtu sales, adjusted to reflect the estimated impact of DSM programs. Id. In addition, Bay State acquires third-party data from independent providers for use in the forecast. This includes actual and forecasted values of economic variables, provided by DRI/McGraw-Hill and effective

degree day ("EDD") data from Meterologix. Id. at 20. The database contains EDDs beginning January 1967. Id. at 29.

B. Weather Data and Planning Standards

Bay State maintains and uses a weather database of division-specific EDDs purchased from Meterologix, which contains daily EDDs dating back to January 1967. Exh. BSG-1, at 28-29. Consistent with the Department's directive in D.P.U. 93-129 to use the largest cost-effective sample size, Bay State utilizes all EDD data from the database for development of design and normal conditions for resource planning purposes. Exh. BSG-1, at 29. Bay State uses a 1-in-25 year condition, as approved in D.P.U. 93-129, for design conditions. Exh. BSG-1, at 29.

C. Normal Year Standard

To determine a normal year condition, Bay State calculates the mean number of EDDs in each month and for each division using the 35-year period from November 1967 through March 2002. The mean monthly EDDs are summed by division to arrive at the normal year EDDs. Exh. BSG-1, at 29.

D. Design Year Standard

Bay State continues to use the 1-in-25 year condition approved by the Department in D.P.U. 93-129 for design conditions. A minimum 1-in-25 year condition implies a higher actual design day condition can be met under some conditions, because the distribution system is generally designed to allow future growth. Exh. BSG-1, at 29.

E. Cold-Snap Planning Standard

In D.P.U. 93-129, Bay State used two different actual 24-day periods to test a cold snap impact on resources, the daily mean of these periods was 54-55 EDD for 24 days. In D.T.E. 98-86, the Department directed Bay State to conduct a separate cold snap analysis based on a

historical cold period. Id. at 30. In response, with this filing Bay State conducted a cold snap analysis using its historical coldest 24-day period (1/6/82-1/29/82). Exh. BSG-1, at 31.

IV. BAY STATE'S SENDOUT FORECAST

A. Standard of Review

Pursuant to G.L. c. 164, § 69I, the Department reviews the long-range forecast of each LDC to ensure that the forecast accurately projects the gas sendout requirements of the utility's market area. The Department's regulations require that the forecast reflect accurate and complete historical data, and reasonable statistical projection methods. A forecast that is based on accurate and compete historical data and reasonable statistical projection methods should provide a sound basis for resource planning decisions. NSTAR Gas Company, D.T.E. 02-12, at 15 (2003) citing Colonial Gas Company, D.P.U. 93-13, at 2 (1995); 1992 Boston Gas Decision at 127; 1987 Berkshire Gas Decision at 56.

The Department determines whether a projection method is reasonable based on whether the methodology is reviewable, i.e., contains enough information to allow a full understanding of the forecast methodology; (2) appropriate, i.e., technically suitable to the size and nature of the particular gas company; and (3) reliable, i.e., provides a measure of confidence that the gas company's assumption, judgments, and data will forecast what is most likely to occur. Id. citing D.P.U. 93-13, at 2; 1992 Boston Gas Company at 127; 1987 Berkshire Decision at 55-56.

B. The Demand Forecast

Bay State performed a forecast of its demand requirements for the five-year period 2002/03 through 2006/07. Id. at 18. Bay State developed separate forecasts for the residential and commercial and industrial ("C&I") customer classes, rather than developing rate class specific forecasts as was done in its previous forecast. Exh. BSG-1, at 16. This refinement

simplifies the process and limits the potential impact of various events on the accuracy of historical data series, such as earlier rate reclassifications. Id.

The demand forecast is developed by first collecting historical and projected data series utilized to develop the forecast models. This information includes customer counts and use per customer data, as well as historical weather and economic data and DSM offsets. Id. Future economic conditions are also considered through independent forecasts prepared by DRI/McGraw-Hill. Next, Bay State prepares separate time series and econometric models by division to project requirements. Each model separately forecasts the number of customers and use per customer and Bay State applies a weighting to the time series and econometric models derived by using statistical analysis to achieve a composite projection of requirements. Id. at 18. Next, Bay State adjusts projected requirements to reflect the impact of DSM measures. Id. The next step includes statistical analysis of historical weather data for each division to establish design-planning standards. Id. at 18-19. The final step is to project requirements based on the forecast models and predictions of future economic conditions. Id. at 19.

1. Development of Forecast Models

a. Econometric Forecasting

Bay State employed econometric techniques to estimate the parameters for the forecast models and to check the statistical properties of the models. Exh. BSG-1, at 23. Generally, the model specifications are consistent across divisions; however, separate models for each division capture different market conditions that would affect the forecast results, such as housing stock and weather. Exh. BSG-1, at 23.

For the residential classes, the econometric forecast reflects two separate forecasts: (1) use per active meter; and (2) number of customers (active meter counts). Exh. BSG-1, at 23.

For C&I customer classes, total throughput was forecast. Exogenous variables evaluated for significance during model specification were EDDs, number of households, gross metropolitan product and a time trend. Bay State added independent variables with a stronger theoretical basis in the specification of the econometric models in response to the Department's review of its prior forecast and supply plan. Exh. BSG-1, at 23. The models presented in this proceeding provide stronger results for Durbin–Watson statistics for the test of first-order serial correlated errors than the Company's previous forecast and supply plan.

b. Time Series Forecasting

Time series analysis relies on past behavior of the data itself, rather than relying on explanatory variables. Exh. BSG-1, at 21. Time series analysis is particularly useful for capturing recent trends in data, which may not otherwise be weighted heavily in an econometric analysis using many years of historical data. In the current forecast, Bay State developed separate time series models for the residential classes and a single C&I class in each of its three Massachusetts divisions – Brockton, Springfield and Lawrence. Exh. BSG-1, at 21.

Bay State modeled total throughput and number of customers (meters) for the C&I classes and use per meter and number of customers (meters) for the Residential classes. Exh. BSG-1, at 21. Each data series was analyzed for stationarity and each was differentiated to account for the existence of a trend or seasonality, or both. The time series analysis is iterative and quantitative issues are analyzed to select a final model. Exh. BSG-1, at 22.

c. Integration of Time Series and Econometric Methodologies

To minimize the impact of potential errors associated with a single forecasting method, Bay State integrates the time series and econometric methodologies. Exh. DTE 1-21. By employing both the Time Series and Econometric forecasts, Bay State is able to improve the

quality of its forecast, by using the strengths of each model. The two forecasts are combined by using, as regressors, the predicted values of each method for the historical period in a regression on actual values. The coefficients of the regression become the weights for each forecast method. This represents an enhancement to the forecast methodology used in D.T.E. 98-86, since the new method determines the relative weighting of each model that provides the best overall predictive value.

d. Transportation Forecast

In preparing its forecast, Bay State analyzed historical information available concerning third-party supply service and concluded that there has been little growth in non-weather normalized throughput or number of meters since shortly after the implementation of full unbundling in November 2000. Exh. BSG-1, at 28. Since February 2001, the Company has experienced little change in the number of customers using third-party suppliers, which has remained at or near the level of 6,000 active meters. Exh. BSG-1, at 28. Recent experience has also shown that suppliers have had creditworthiness difficulties on the upstream pipeline system or have exited the retail business. Tr. at 25. Based on current levels of supplier activity and migration, Bay State concluded that there is no indication that there will be any measurable change in numbers of customers taking third-party supply service during the forecast period.

C. Bay State's Sendout Forecast Methodology is Reviewable, Appropriate and Reliable.

Bay State has provided sufficient information to allow a full understanding of its forecast methodology. Thus, the Company's forecast methodology is reviewable. The Company has used technical analysis in its sendout forecast suitable to the size and nature of the Company, consistent with the methods used in previous forecasts. Further, Bay State's sendout forecast is consistent with the results of its backcast analyses. For example, a backcast summary for all

divisions of the time series models shows average annual forecast error for a four-year period for all classes of less than 1%. Exh. DTE 1-9. Bay State also prepared a backcast using the regression model. Exh. DTE 1-15. Bay State's backcast of the combined models provides the lowest average annual forecast error for the four-year period (1998-2002). Exh. DTE 1-25. Similarly, Bay State's current methodology corrects for first-order serial correlated errors and thus provides stronger results with respect to Durbin-Watson statistics. Exh. DTE 1-11. Accordingly, Bay State has demonstrated that its forecast of sendout requirements is appropriate and reliable.

V. RESOURCE PLANNING PROCESS

A. Standard of Review

In accordance with G.L. c. 164, § 69I, the Department is obligated to "ensure a necessary energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost." In reviewing a gas company's supply planning process, the Department examines both adequacy and cost. NSTAR Gas Company, D.T.E. 02-12, at 33, citing Commonwealth Gas Company, D.P.U. 92-159, at 53 (1995); Colonial Gas Company, D.P.U. 93-13, at 49-50 (1995); 1992 Boston Gas Decision at 201.

The Department examines a gas company's supply plan to determine whether the plan is adequate to meet projected normal year, design year, design day and cold-snap firm sendout requirements over the five-year planning period. To establish adequacy, a gas company must demonstrate that it has an identified set of resources that meet its projected sendout under a reasonable range of contingencies. If the Company cannot establish that its identified resources will meet sendout requirements under a reasonable set of contingencies, the Company must demonstrate that it has an action plan which meets projected sendout in the event that the

identified resources will not be available when expected. NSTAR Gas Company, D.T.E. 02-12, at 33, citing Colonial Gas Company, D.P.U. 96-18, at 31 (1996); Commonwealth Gas Company, D.P.U. 92-159, at 54 (1995); Colonial Gas Company, D.P.U. 93-13, at 50 (1995).

In reviewing a company's supply plan, the Department reviews a company's overall supply planning process. An appropriate supply planning process is essential to the development of an adequate, low-cost, and low environmental impact resource plan. In accordance with this standard, a gas company must establish that its supply planning process enables it to (1) identify and evaluate a full range of supply options, and (2) compare all options, including conservation and load management, on an equal footing. NSTAR Gas Company, D.T.E. 02-12, at 34, citing D.P.U. 96-18, at 31; D.P.U. 92-159, at 54; D.P.U. 93-13, at 51; 1992 Boston Gas Decision at 202.

Lastly, the Department will review whether a gas company's supply plan minimizes cost. A supply plan will be found to be least cost if it minimizes cots subject to trade-offs with adequacy and environmental impact. NSTAR Gas Company, D.T.E. 02-12, at 34, citing D.P.U. 92-159, at 55; D.P.U. 93-13, at 51-52; 1992 Boston Gas Decision at 203. A gas company must establish that application of its supply planning resource has resulted in the addition of resource options that contribute to a least-cost plan. NSTAR Gas Company, D.T.E. 02-12, at 34.

B. Bay State's Supply Planning Process

The primary goal of Bay State's resource planning process is to acquire and manage resources in a manner that achieves a best-cost resource portfolio for its customers. Exh. BSG-1, at 34. This entails balancing cost and non-cost criteria, consistent with Department precedent. Specifically, Bay State attempts to: (1) reduce portfolio costs; (2) maintain portfolio reliability; (3) provide flexibility; and (4) acquire viable resources. Exh. BSG-1, at 34. The resource

planning process employs analytic tools, including the SENDOUT model and other assessment methods to perform long-range planning and evaluation of individual resource decisions. Non-cost resource evaluation is generally performed using spreadsheet-based assessment tools. Id. Bay State's resource planning process, which is largely unchanged since its prior long-range forecast and supply plan, has previously been found by the Department to be reasonable and appropriate. D.P.U. 93-129, at 42.

C. Application of Bay State's Supply Planning Process

Bay State's planning process begins with establishment of appropriate goals and objectives. These include acquisition and management of resources in a manner that achieves a best-cost resource portfolio for customers. Exh. BSG-1, at 34. On an ongoing basis, Bay State performs long and short-range analyses of its potential need to adjust its portfolio to meet supply planning objectives. Any time a decision to modify the portfolio of resources is being considered, the Company performs a comprehensive analysis, including a determination of need and evaluation of potential resource options. Exh. BSG-1, at 35. To perform this analysis, the Company employs its SENDOUT model, which has been previously accepted by the Department. In Bay State's previous forecast and supply plan proceeding, the Department found "Bay State's SENDOUT model allows the Company to identify a variety of capacity and commodity options under multiple planning contingencies and migration scenarios." Bay State Gas Company, D.T.E. 98-86, at 30. See, also, Bay State Gas Company, D.T.E. 00-99, at 5 (2002).

Any decision to modify the portfolio begins with a determination of need based on current resources under contract and current demand forecasts. Bay State's planning standards, including forecasts of annual, peak, cold-snap and design conditions, determine customer

requirements. The existing portfolio is compared to the demand forecasts to determine whether the portfolio is projected to be adequate over the planning horizon. If there are anticipated deficiencies or excess resources, Bay State will use this information to identify the quantity and duration of necessary new resources or whether resources in the portfolio should be released, decontracted, etc. Exh. BSG-1, at 35.

Once a need is established, Bay State prepares a comprehensive set of alternative portfolio options that have the potential to meet the identified need. Bay State is active in regional capacity markets and is constantly gaining market intelligence that can be used to help identify potential resources. Exh. BSG-1, at 35-36. Individual resource options are analyzed based on specific price and non-price criteria, which are given appropriate weighting. These evaluation criteria include price, reliability, flexibility and viability. Once all options have been evaluated, Bay State selects the best alternative(s) to pursue. Exh. BSG-1, at 36.

D. Specific Resource Decisions

Bay State recently has made several portfolio decisions that are described in its forecast and supply plan, most of which have already been submitted for Department review in other dockets. The specific resource decisions are as follows:

1. Terminated Contracts

a. National Fuel

In March 2002, Bay State provided notice that it would not be renewing contract No. E00516. This decision was based on a low utilization rate and lack of upstream resources to flow gas to the contract.

b. Dominion

In March 2002 Bay State provided notice that it would not be renewing contract No. 100009. This decision was based on cost, low utilization rate, and a lack of firm downstream delivery capability.

c. Tennessee

In October 1999, Bay State terminated two contracts on Tennessee, which had receipt points in the Gulf and delivery points in zones 4 and 5 on Tennessee's system. Because these delivery points required transport on three additional pipelines to reach the Company's citygate, their costs were relatively expensive, were of small volume, and had low utilization rates.

d. Algonquin

Bay State allowed Algonquin Contract No. 97038 to terminate on March 31, 2000. The contract did not have any firm upstream interconnecting capacity or primary deliverability to Bay State's citygate. This decision was approved by the Department in Docket D.T.E. 00-52.

2. Renewed and Replaced Contracts

a. Replacement of Boundary Gas, Inc. Bundled Supply

Following completion of a competitive bidding process, Bay State entered into a contract with EnCana to replace approximately 10,500 of supply delivered at the US/Canadian border for a twenty-six month period. The replacement contract continues the historically competitive price of the Boundary supply and offers Bay State greater summer period flexibility. This replacement contract was reviewed by the Department in Bay State Gas Company, D.T.E. 02-52. In conjunction with its new Boundary agreement, Bay State made the decision to maintain two underlying transportation contracts on Tennessee and to convert one of those contracts to part 284 transportation service, which will allow the contract to be assigned to third parties.

b. Tennessee Pipeline and Storage Capacity Renewals

Bay State renewed a substantial portion of its Tennessee capacity for a five-year period pursuant to its existing rollover rights. Bay State has renewed this capacity until November 2007, when it may be required to bid to retain this valuable capacity under modified FERC rules. The Department is reviewing these recontracting decisions in Docket D.T.E. 03-32.

c. Acquisition of Hubline Capacity

Bay State has entered into a precedent agreement with Duke Energy to acquire 20,000Dth of incremental capacity on Duke's Hubline project to meet growing requirements in Bay State's Brockton division and to increase operational and supply flexibility. Hubline offers a cost-effective means of increasing deliverability into a constrained area of Bay State's service territory. Bay State's request for approval of its Hubline capacity acquisition is currently pending before the Department in Docket D.T.E. 03-37.

d. Coral Supply Contract

Bay State's supply contract with Coral expired on November 1, 2002. Bay State replaced a portion of the contract with supply from BP Amoco for the November 2002 through March 2003 period. This decision was based on cost, need and the fact that none of the corresponding downstream transportation contracts expire during the forecast. The availability of additional unsubscribed supply will allow Bay State to eliminate the need to keep this supply path company managed for capacity assignment purposes. Exh. BSG –1, at 48.

e. Tennessee Storage

In August 2002, Bay State renewed storage contract No. 5178 as well as transportation Contract No. 5293 for five years. This decision was based on the low rates for both services and the Company's desire to maintain storage resources in its portfolio. The Company also sought to

optimize its only remaining right to extend these contracts without undergoing a competitive bid process for this capacity.

f. Tennessee Longhaul Transportation

In August 2002, Bay State renewed longhaul transportation contract No. 5173 for a five-year period. This decision was based on Tennessee's competitive rate and supply diversity – this contract is the only Gulf Coast longhaul supply for the Springfield/Lawrence service territories. Bay State also sought to optimize its only remaining right to extend this contract without undergoing a competitive bid process against other Tennessee customers. Exh. BSG-1, at 49.

g. Granite State Gas Transmission

In November 2000, Bay State reduced the MDQ of its Granite State capacity in Contract No. 93-101-F from 126,279 to 40,600 and increased Contract 93-102-F from 12,547 to 21, 400. Contract 94-101-F is a winter-only service at a negotiated rate and is tied to the Company's winter PNGTS service. Granite allows Bay State to bypass Tennessee and Algonquin transportation costs through displacement and provides the Company with greater balancing flexibility day to day through Operational Balancing Services. Exh. BSG-1, at 49.

h. Potential Additional Incremental Resources

Bay State is evaluating various additional resources to serve its Brockton and Springfield divisions during the forecast period. These options include acquisition of short-haul capacity on Tennessee and citygate supply services. Although some level of resources will be necessary during the forecast period, time is available to continue to assess market conditions and evaluate alternatives before such resources will be needed. Once any additional decisions are made, Bay State would file any resulting contracts with the Department for review and approval.

3. Demand Side Resources

Bay State's current DSM programs and measures were implemented pursuant to a settlement agreement approved in Docket D.T.E. 01-27 for the period ending April 30, 2004. The Company's current DSM programs include residential, residential low-income, multi-family and C&I programs with a variety of individual program measures. Specific programs include the following:

?? Residential High Efficiency Heating Equipment Program: Provides rebates to customers for installation of qualifying high efficiency furnaces, boilers and steam boilers

?? High Efficiency Water Heating Program: Provides rebates to customers for installation of qualifying high efficiency water heating systems;

?? Energy Star Homes Program: Provides Home Energy Rating System certifications for qualifying Energy Star homes;

?? Residential Customer Measures Program: Provides single family up to four-family homes with energy audit services, installation of domestic hot water measures, building shell, duct and pipe insulation and clock thermostats;

?? Residential Low Income Program: Provides income eligible customers, in coordination with Fuel Assistance and CAP agencies, with energy audit services, heating system upgrades and repair, installation of domestic hot water measures, building shell, duct and pipe insulation and clock thermostats;

?? Small Commercial High Efficiency Heating Program: Provides rebates to small commercial customers for installation of qualifying high efficiency furnaces, boilers and steam boilers;

?? Small Commercial High Efficiency Water Heating Program: Provides rebates to small commercial customers for installation of qualifying high efficiency water heating systems;

?? Infrared Heating Program: Provides rebates to customers for installation of qualifying infrared heating units/systems

?? Multifamily Customer Measures Program: Provides multifamily home customers n master-metered accounts with a no cost-energy audit and customer measures services on a site-specific basis;

?? Medium and Large C&I Customer Measures Program: Provides medium and large C&I customer measure services on a site-specific basis.

Updated screening analyses show that the existing DSM programs will continue to be cost-effective beyond the end of the current program period. Accordingly, Bay State has incorporated cost-effective DSM options into its plan for the five-year planning period.

E. Adequacy of Bay State's Supply Portfolio

After completion of the demand forecast, it is input into the Company's portfolio simulation model. Since 1995, Bay State has utilized the SENDOUT model, a multi-period optimization model, which utilizes a linear programming algorithm to identify the portfolio that will satisfy Bay State's firm sales at the least cost. Exh. BSG-1, at 31. The SENDOUT model incorporates transportation throughput, but assigns third party supply to these requirements. Id. Each throughput scenario is input into SENOUT separately. Id. From these scenarios – base, high and low, a daily demand forecast is calculated for normal and design weather conditions using the base and temperature-sensitive heating load factors. Id. at 31.

Daily EDDs for each day, based on historical information, are multiplied by the monthly heating increment. The result is added to base load, to arrive at daily requirements. For design scenarios, EDDs are approximately 9% higher, to reflect the 1-in-25 probability of occurrence. Id. at 31.

To analyze cost implications of resource alternatives, Bay State performs optimization analyses using its SENDOUT model.

Because some of the resources evaluate included incremental pipeline capacity, Bay State performed a ten-year analysis to find the most cost-effective resources. SENDOUT was allowed to optimize the portfolio assuming the quantity of incremental resources could be initially selected for the 2003/04 winter and resized for the 2008-09 winter.

In addition, Bay State supplements its cost analyses with assessments of non-cost characteristics before making resource decisions. Specifically, Bay State evaluates the non-cost attributes of potential resources including flexibility, viability and reliability. This evaluation is completed by assessment techniques and scoring and is integrated with cost evaluations to arrive at final resource decisions. Exh. BSG-1, at 57.

1. Normal-Year and Design-Year Adequacy

Over the five-year forecast period, base case throughput is estimated to increase by approximately 2.7 million MMBtu or 4.1 percent. Base case meters are projected to increase by approximately 8,900 or 3.2 percent. The forecast for annual growth is similar for each of Bay State's operating divisions; however, throughput in the Brockton division shows slightly higher annual growth. Exh. BSG-1, at 27. Average annual growth under the low scenario is 0% for both number of customers (as measured by meters) and throughput. Exh. BSG-1, at 27, Table III-1. The base case scenario shows growth in throughput of 1.1% and growth for number of

customers of 0.81% over the planning horizon. Id. The high case scenario shows growth in both throughput and number of customers of 1.7%. Id.

Based on the current forecasts, Bay State faces a deficiency beginning in 2003/04, which is primarily attributable to customer growth in the Brockton division. Exh. BSG-1, at 52. Also, as other resources under contract expire, the Company evaluates various replacement options. Bay State evaluated a number of specific resource alternatives using SENDOUT. These alternatives included incremental capacity from the Hubline project, incremental short-haul Tennessee capacity, incremental citygate services, and renewal of expiring contracts, including DOMAC and El Paso peaking contracts.

The resources selected by the SENDOUT model for the 2003/04 and 2008/09 split years are shown in Table BSG-IV-2. Exh. BSG-1, at 54.

A comparison of projected requirements over the forecast period to available resources shows that under the low case-normal year scenario, there are no supply deficiencies. Exh. BSG-1, Schedule BSG-IV-5. Resources are also adequate to meet projected high case-normal scenario over the five-year planning horizon. Exh. BSG-1, Schedule BSG-IV-6. Thus, Bay State's resources are adequate to meet its projected normal year requirements over the planning horizon.

Bay State has also presented a comparison of requirements vs. resources for its base case-design year conditions that shows that available resources are adequate to meet the base case-design year conditions over the entire planning horizon. Exh. BSG-1, Schedule BSG-IV-7. Similarly, Bay State's resources are adequate to meet the high case-design year sendout projected over the planning period. Exh. BSG-1, Schedule BSG-IV-8.

2. Cold-Snap Analysis

Bay State also conducted an analysis of its available resources to projected requirements under cold snap-normal year conditions. This analysis demonstrates that Bay State's resources are adequate to meet projected cold snap-normal year conditions over the planning horizon. Exh. BSG-1, Schedule BSG-IV-9.

3. Design-Day Adequacy

Bay State presented the results of a comparison of available resources to design day-base case requirements. This analysis shows that Bay State's resources are adequate to meet projected design day-base case conditions over the planning horizon. Exh. BSG-1, Schedule BSG-IV-10. Similarly, Bay State presented an analysis demonstrating that its resources are sufficient to meet projected design day-low case requirements over the planning period. Exh. BSG-1, Schedule IV-11. Bay State also presented the results of an analysis demonstrating that its resources are sufficient to meet projected design day-high case requirements over the planning period. Accordingly, Bay State has demonstrated that its resources are adequate to meet design day requirements over the planning horizon.

DOER has argued that the Company's resources are inadequate to meet design-day requirements for the Brockton division. DOER Brief, at 10-14. Bay State disagrees with this assertion. Bay State's proposed agreement to acquire capacity associated with the new Hubline project is currently pending before the Department. This capacity would be used to serve the Brockton division and is currently anticipated to have a November 1, 2003 in-service date. Tr. at 81. Bay State has identified a few alternatives that it would pursue in the event that the Hubline capacity were not available as scheduled. Id. Further, Bay State's witness testified that the Company has previously entered into firm exchange agreements to meet requirements in the

Brockton Division and could do so in the future. Tr. at 84-86. Thus, Bay State has identified an appropriate set of alternatives to meet the anticipated capacity needs for the Brockton division.

4. Growth-Scenario Analysis

In addition to the base case SENDOUT analyses, Bay State performed an analysis of resource requirements under high and low growth scenarios. The high growth forecast indicates an earlier need for a citygate service in the Brockton division as well as a small incremental peak day need for the second citygate alternative in the last year of the forecast. Exh. BSG-1, at 54. Under the low growth scenario, there is no need for citygate service in the Brockton division over the entire five-year planning period. With acquisition of capacity from the Hubline project, Bay State is able to delay its decision on whether to purchase citygate services or other incremental resources for the Brockton division until the time of need is closer. Accordingly, Bay State has demonstrated that its resources are adequate to meet projected requirements under the growth scenarios over the forecast period.

5. Evaluation of Demand Side Resources

Consistent with the Department's directives in D.T.E. 98-86, Bay State used a separate screening process to evaluate DSM resources in its planning process. The current package of cost-effective DSM resources were incorporated into Bay State's integrated resource analyses through an appropriate offset to the Company's demand forecast. Exh. BSG-1, at 56-57.

F. Bay State's Resource Planning Process Results in a Best-Cost Portfolio that is Adequate to Meet Projected Sendout Requirements over the Forecast Period.

Bay State has demonstrated that its resource plan is adequate to meet projected normal year, design year, design day and cold-snap firm sendout requirements over the five-year planning period. Bay State has demonstrated that it has an identified set of resources that meet its projected sendout under a reasonable range of contingencies. Further, Bay State has

demonstrated that it employs a supply planning process that identifies and evaluates a full range of supply options and compares all options, including DSM, on equal footing. Finally, Bay State has demonstrate that its supply plan minimizes cost and results in the selection of resources that contribute to a least cost plan. Accordingly, Bay State has demonstrated that its supply planning process is adequate and provides for least-cost resources.

G. Bay State's Proposed 10% Supply Planning Contingency Represents An Innovative Approach To Addressing New Challenges To Reliability In A Cost Effective Manner.

Since its last forecast, Bay State has identified two new reliability issues which are not fully addressed by the traditional supply planning process. One is the risk that so-called grandfathered transportation customers will migrate in significant numbers back to firm transportation service. Exh. DOER 2-2; Tr. at 14-16. The other is that terrorist actions appear to pose a more significant threat to energy infrastructure post 9/11. Tr. at 24. As we demonstrate below, both risks are more pronounced than before and require innovations to the traditional planning process. Bay State's 10% contingency proposal is a necessary, and cost-effective, solution to these newly identified problems.

1. Migration Of Grandfathered Customers

a. The Risk of Migration Back to Firm Service is Significant

The record shows that Bay State serves a significant number of transportation customers who left firm default service before the Department established mandatory capacity release. Exhs. BSG-1, at 40, DOER 2-2; Tr. at 14-16. These customers, who did not take with them their pro-rata share of Bay State's capacity, are commonly termed grandfathered customers. Bay State has a disproportionate share of such grandfathered customers because of its aggressive attempts to promote competition through its pilot program. In order to encourage competition,

Bay State permitted its customers to leave firm default service prior to the Department's adoption of a mandatory capacity release policy. Exh. BSG-1, at 40. Thus, if these grandfathered customers return to firm default service, Bay State would need to acquire new capacity to meet their needs. Tr. at 15.

The record shows that the risk of significant numbers of grandfathered customers returning to firm default service is now sufficiently great that it must be addressed in Bay State's supply planning process.[1] Exh. BSG-1, at 40, Figure BSG-IV-1. The trend in recent years is that in-migration back to firm service has significantly exceeded any out migration. Id.; Tr. at 25, 52. Moreover during the very pendency of this proceeding, AllEnergy, perhaps the largest retail gas supplier in the Commonwealth, has announced its intention to exit the market. Tr. at 19. It is not clear, at this date, how many of AllEnergy's customers will ultimately migrate back to firm default service. Moreover, the issues which caused AllEnergy, an active participant in Department proceedings, to exit the market affect all gas retail suppliers. We submit that the evidence shows that the risk of returning grandfathered customers is sufficiently high that it would simply not be prudent for the Company to ignore it in its supply planning process.

b. It Is Not Appropriate For The Company To Refuse Service To Migrating Grandfathered Customers.

The Attorney General, unlike DOER, does not claim that the risk of grandfathered customers migrating back to firm default service does not exist. Rather, the Attorney General argues that Bay State should simply refuse to serve such customers. AG Brief at 5.

[1] DOER plays semantics with Mr. DaFonte's testimony in a strained attempt to argue that the Company contradicted the primary purpose of the 10% contingency. (DOER Brief at 6) The only fair reading of the Company's case, and Mr. DaFonte's testimony, is that the current planning process (which does not include the 10% contingency) seeks to serve firm default service and non-grandfathered transportation customers only, not grandfathered firm transportation customers. The very purpose of the 10% contingency (which would be a new addition to the Company's current planning process) is, in part, to serve grandfathered customers who migrate back to firm default service.

As a threshold matter, Bay State believes that it is not permitted to refuse to serve customers that migrate back to firm default service without a change in the Department's current policy. See, Exh. AG 1-1. Moreover, a refusal to accept back transportation customers would have an adverse effect on competition. Customers in the future may be reluctant to move to the competitive market if they believed that they would never be able to return to firm default service.

2. The Threat Of A Terrorist Attack On Energy Infrastucture Targets Must Be Reflected In the Supply Planning Process.

Unfortunately, the threat of a terrorist attack on energy infrastructure targets has taken on a new reality post 9/11. The fact is that the shipment of LNG to Distrigas was stopped for nearly two months after the terrorist attacks. Exh. BSG-1, at 42. While the probability of any such future interruption is difficult to quantify, Bay State strongly believes that prudent planning requires that it take such a contingency into consideration.

3. The 10% Contingency Is The Most Reasonable And Cost-Effective Way Of Meeting These Two New Reliability Issues.

Assuming that the issues of migration of grandfathered transportation customers and the threat of new terrorist attacks should be addressed in the planning process, the question left for consideration is how best to do so. Bay State acknowledges that these are novel issues for which there is limited precedent. Bay State has attempted to "think outside the box" and develop a proposal that adequately protects against these risks at the lowest possible cost. Bay State believes that its 10% contingency proposal does exactly that.

The 10% contingency provides a robust hedge against both risks. It would provide Bay State with the ability to serve more than half of all grandfathered customers assuming that they all returned to firm service simultaneously on the peak day. The 10% would also allow Bay

States to keep its own LNG[2] and propane facilities in reserve in case of any supply disruption, which could also include events such as well freeze-offs, pipeline compressor outages or other unanticipated events. Importantly, the 10% contingency proposal would accomplish these objectives at the very low additional cost of less than 1 percent of the total portfolio cost. We think any fair-minded assessment of Bay State's proposal must conclude that it does an excellent job of balancing reliability and cost.

DOER's argument that Bay State should change its design day standard in place of the 10% contingency (DOER Brief, at 8) is without merit. As Mr. DaFonte testified, the concept of a design day captures the risk of one variable, weather. Tr. at 125-126. The term "1 in 25" or "1 in 33" refers solely to weather conditions, i.e. the coldest day in twenty five years or the coldest day in thirty-three years. Based on experience, gas companies can predict with a fair degree of precision how much more gas will be used for every degree the temperature drops (EDDs). By increasing its planning standard, Bay State would merely be providing a greater hedge against the risk of an extraordinarily cold day and the increase in demand that is associated with that lower temperature. Id.

The risks for which the 10% contingency are designed have nothing to do with weather. Migration of grandfathered transportation customers will be associated with an event like AllEnergy exiting the market. It would not be the direct result of the weather. The same holds true for a terrorist event. Moreover, the effect of either contingency on the Company's demand/supply will have nothing to do with the relationship between EDDs and gas consumption. The number of returning grandfathered customers will be a function of the size of the retail company leaving the business. Obviously, the effect of any supply disruption will depend upon the nature of the event. In either case, the increased consumption associated with

[2] These LNG facilities are not dependent upon continued shipments of LNG to the Distrigas terminal.

colder temperature provides no guidance on what type of supply contingency is necessary to protect against these risks. In sum, comparing the 10% contingency to a higher design day standard is the classic "apples and oranges" comparison.[3]

Finally, the Attorney General argues that the cost of the 10% contingency should be allocated to transportation customers alone. AG Brief, at 5-6. We disagree for two reasons. First, all customers benefit from the 10% contingency as it is not designed solely to accommodate returning transportation customers. Second, we believe that imposing all such costs on returning customers will tend to discourage competition.

VI. CONCLUSION

Bay State has demonstrated that its analysis to forecast gas sendout requirements over the forecast period is reasonable and that the methodology is reviewable, appropriate and reliable.

Bay State has demonstrated that it has developed and consistently applied an appropriate methodology to select its normal-year, design-year and design-day standards. Thus, Bay State has demonstrated that those standards are reviewable, appropriate, and reliable.

Bay State has also demonstrated that its available resources are adequate to meet projected sendout under a variety of contingencies and that those resources were selected pursuant to an appropriate process that places all resources on equal footing and results in a least cost portfolio.

Accordingly, Bay State respectfully requests that the Department approve its proposed long-range forecast and resource plan.

[3] Moreover, the DOER proposal of a higher design day standard allocates costs only to the firm default service customers and non-grandfathered transportation customers while leaving the grandfathered customers, who may be the cause of the higher planning standard, unaffected.

Respectfully submitted,

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Dated: July 11, 2003